

AMENDMENTS TO THE DRAWINGS:

The attached sheet of drawings includes changes to Fig. 1. This sheet, which includes Figs. 1-2, replaces the pending sheet including Figs. 1-2.

Attachment: Replacement Sheet (1)

REMARKS

The Office Action of March 21, 2008, has been carefully reviewed, and in view of the above amendments and the following remarks, reconsideration and allowance of the pending claims are respectfully requested.

Responsive to the Requirement for Restriction, Applicant hereby confirms the election of Group 1, claims 1-11. The non-elected claims 12-14 have been canceled.

The drawings are amended as set forth above to include reference numeral "1" in Figure 1. Applicant submits that the Examiner's objection to the drawings has thus been obviated.

With respect to the claim objections set forth on pages 5-6 of the outstanding Official Action, claim 8 has been canceled, and claims 3, 4 and 9 have been amended as set forth above to address the Examiner's objections.

Claim 1 as set forth above has been amended above to include the recitations of claims 2 and 5. In the above Office Action, claims 1, 2 and 10 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Freakes et al. (WO 2002/31461) in view of Reuter (U.S. Patent No. 4,974,679). It appears that the Examiner has inadvertently included standard paragraphs regarding joint inventorship relative to Section 103 rejections. Applicant respectfully submits there is a sole inventor in the present application and said considerations are not applicable.

The primary reference upon which the Examiner relies, Freakes et al., shows a flexible diaphragm as a lid of the sensor, while the present invention uses a substantially rigid cover carrying mechanical loading more than 50 kg. The lid of Freakes et al. is thin as compared to the substrate 7, and Freakes et al. does not

mention anything about the load bearing capability of the lid itself. Therefore, one skilled in the art would conclude that the load bearing element is substrate 7 (as is conventional) and the lid has its only functions to seal the pressure monitoring device and to transmit the pressure force to the substrate 7. Hence, Freakes et al. shows a load bearing substrate (7) for supporting the sensor element, while the presently claimed invention uses flexible diaphragm for the same purpose. Moreover, Freakes et al. uses SAW (Surface Acoustic Wave) devices (resonator elements) as sensor elements, while the claimed invention uses a ceramic sensor diaphragm, and Freakes et al. needs an acoustic wave input signal and teaches signal output from the sensor elements by means of an antennae, while the claimed invention, as amended above, uses a contact spring in contact with the sensor diaphragm. Still further, Freakes et al. teaches a rectangular shape of the pressure monitoring device and its components, while the claimed invention uses rotationally symmetrical construction.

The Examiner has also relied upon Reuter to show loading capability of more than 50 kg of the load cell, but the load cell of Reuter is of another type than the claimed invention or the primary reference to Freakes et al.. Namely, Reuter is of the type wherein the loadable element is the diaphragm itself, having strain gauge or piezoelectric devices fixed on the inner surface of the loadable diaphragm. In the claimed invention the loadable cover and the very sensitive diaphragm are separate elements, which only contact each other at the central loading point.

Finally, claim 1 has been amended above to include the recitations of claims 2 and 5. In the above Office Action, claim 5 was rejected under 35 U.S.C. § 103(a) as

being unpatentable over Freakes et al. (WO 2002/31461) in view of Reuter (U.S. Patent No. 4,974,679) and Kusakabe et al. (EP 0710827) and in further view of Sasaki et al. (U.S. Patent No. 5,889,873).

Kusakabe et al. shows a pressure sensing element 9 with strain sensing resistors 12. This element is the actual load bearing element and therefore it is completely different from the flexible diaphragm and the piezoceramic sensor diaphragm applied thereon, as defined in amended claim 1. Kusakabe et al. shows a thin diaphragm 7 to be loaded by pressure, while the claimed invention shows a substantially rigid cover which is to be loaded. Kusakabe et al. relates to neither the problem nor the solution of the claimed invention. That is, a new and inventive sensor for measuring extremely small changes of force or pressure simultaneously with high loading of the sensor. This problem is not resolved with sensors of Freakes et al., Reuter, or Kusakabe et al., because such a problem does not even exist in the applications of use of these prior known sensors.

The final prior art document relied upon by the Examiner in rejecting claim 5, Sasaki et al, fails to teach a spring contact with the sensor diaphragm opposite to the cover protrusion or shoulder. In the claimed invention, as amended above, the location of the spring and the loading protrusion on opposite sides of the sensor diaphragm enable strong and reliable spring contact simultaneously with the use of very sensitive sensor diaphragm.

Accordingly, Applicant respectfully submits that claim 1 is not rendered obvious by the cited prior art. The remaining claims depend from claim 1 either directly or indirectly and are thus patentable based at least on their dependence therefrom.

CONCLUSION

In view of the above amendments and remarks, Applicant respectfully submits that the claims of the present application are now in condition for allowance, and an early indication of the same is earnestly solicited.

Should any questions arise in connection with this application or should the Examiner believe that a telephone conference would be helpful in resolving any remaining issues pertaining to this application; the Examiner is kindly invited to call the undersigned counsel for Applicant regarding the same.

Respectfully submitted,

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